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NEWS 1 Web Page for STN Seminar Schedule - N. America  
NEWS 2 MAY 01 New CAS web site launched  
NEWS 3 MAY 08 CA/Capplus Indian patent publication number format defined  
NEWS 4 MAY 14 RDISCLOSURE on STN Easy enhanced with new search and display fields  
NEWS 5 MAY 21 BIOSIS reloaded and enhanced with archival data  
NEWS 6 MAY 21 TOXCENTER enhanced with BIOSIS reload  
NEWS 7 MAY 21 CA/Capplus enhanced with additional kind codes for German patents  
NEWS 8 MAY 22 CA/Capplus enhanced with IPC reclassification in Japanese patents  
NEWS 9 JUN 27 CA/Capplus enhanced with pre-1967 CAS Registry Numbers  
NEWS 10 JUN 29 STN Viewer now available  
NEWS 11 JUN 29 STN Express, Version 8.2, now available  
NEWS 12 JUL 02 LEMBASE coverage updated  
NEWS 13 JUL 02 LMEDLINE coverage updated  
NEWS 14 JUL 02 SCISEARCH enhanced with complete author names  
NEWS 15 JUL 02 CHEMCATS accession numbers revised  
NEWS 16 JUL 02 CA/Capplus enhanced with utility model patents from China  
NEWS 17 JUL 16 Capplus enhanced with French and German abstracts  
NEWS 18 JUL 18 CA/Capplus patent coverage enhanced  
NEWS 19 JUL 26 USPATFULL/USPAT2 enhanced with IPC reclassification  
NEWS 20 JUL 30 USGENE now available on STN  
NEWS 21 AUG 06 CAS REGISTRY enhanced with new experimental property tags  
NEWS 22 AUG 06 BEILSTEIN updated with new compounds  
NEWS 23 AUG 06 FSTA enhanced with new thesaurus edition

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,  
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS LOGIN Welcome Banner and News Items  
NEWS IPC8 For general information regarding STN implementation of IPC 8

Enter NEWS followed by the item number or name to see news on that specific topic.

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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 10:53:38 ON 07 AUG 2007

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'CAPLUS' ENTERED AT 10:54:08 ON 07 AUG 2007

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FILE COVERS 1907 - 7 Aug 2007 VOL 147 ISS 7

FILE LAST UPDATED: 6 Aug 2007 (20070806/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s "methyl styrene" and "cumyl alcohol" and (dehydrate or dehydration)

1017827 "METHYL"  
680 "METHYLS"  
1018242 "METHYL"  
("METHYL" OR "METHYLS")  
946392 "ME"  
10795 "MES"  
953164 "ME"  
("ME" OR "MES")  
1627790 "METHYL"  
("METHYL" OR "ME")  
293775 "STYRENE"  
4575 "STYRENES"  
294899 "STYRENE"  
("STYRENE" OR "STYRENES")  
1679 "METHYL STYRENE"  
("METHYL" (W) "STYRENE")  
3472 "CUMYL"  
266558 "ALCOHOL"  
174754 "ALCOHOLS"  
408291 "ALCOHOL"  
("ALCOHOL" OR "ALCOHOLS")  
594177 "ALC"  
195512 "ALCS"  
693565 "ALC"  
("ALC" OR "ALCS")  
853641 "ALCOHOL"  
("ALCOHOL" OR "ALC")  
299 "CUMYL ALCOHOL"  
("CUMYL" (W) "ALCOHOL")  
2493 DEHYDRATE  
1018 DEHYDRATES  
3468 DEHYDRATE  
(DEHYDRATE OR DEHYDRATES)  
101722 DEHYDRATION  
433 DEHYDRATIONS  
101833 DEHYDRATION

(DEHYDRATION OR DEHYDRATIONS)

L1 1 "METHYL STYRENE" AND "CUMYL ALCOHOL" AND (DEHYDRATE OR DEHYDRATI  
ON)

=> d l1 abs ibib

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

AB An application of transition metal catalysts, supported on silica gel, to several organic reactions was investigated under moderate conditions in liquid or vapor phase. Strong acid sites ( $H_0 < 3.3$ ) formed during the chemical fixation of the metal species to silanol groups on the gel-surface. The activities of the catalysts correlate approx. with the amts. of acidity, for typical acid-catalyzed reactions, e.g., the dehydration of alcs. and the isomerization of olefins. In addition, behaviors of the catalysis were also affected by certain electronic properties, such as the nature of d orbitals and the redox character of the resp. metal species, in the cases of hydroperoxide-epoxidn. of olefins and phenol-forming decomposition of cumene hydroperoxide. Remarkable features of catalysis were observed with the Ti- or Zn-supported type catalysts.

ACCESSION NUMBER: 1988:166804 CAPLUS

DOCUMENT NUMBER: 108:166804

TITLE: Transition metal species supported on silica gel. A versatile catalyst for organic reactions in liquid or vapor phase

AUTHOR(S): Kato, Shinichi; Yoshida, Shoji

CORPORATE SOURCE: Tech. Coll., Kyoto Inst. Technol., Kyoto, 606, Japan

SOURCE: Memoirs of the Faculty of Engineering and Design, Kyoto Institute of Technology, Series of Science and Technology (1986), 35, 25-37

CODEN: MFETEC; ISSN: 0911-0305

DOCUMENT TYPE: Journal

LANGUAGE: English

=> FIL STNGUIDE

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

17.71

17.92

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-0.78

-0.78

FILE 'STNGUIDE' ENTERED AT 10:57:44 ON 07 AUG 2007

USE IS SUBJECT TO THE TERMS OF YOUR CUSTOMER AGREEMENT

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FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Aug 3, 2007 (20070803/UP).

=> s "benzyl alcohol" and (dehydration or dehydrate) and alumina

0 "BENZYL"

0 "ALCOHOL"

0 "BENZYL ALCOHOL"

("BENZYL" (W) "ALCOHOL")

0 DEHYDRATION

0 DEHYDRATE

1 ALUMINA

L2 0 "BENZYL ALCOHOL" AND (DEHYDRATION OR DEHYDRATE) AND ALUMINA

=> s "benzylic alcohol" and (dehydration or dehydrate) and alumina

0 "BENZYLIC"

0 "ALCOHOL"

0 "BENZYLIC ALCOHOL"

("BENZYLIC" (W) "ALCOHOL")

```

      0 DEHYDRATION
      0 DEHYDRATE
      1 ALUMINA
L3      0 "BENZYLIC ALCOHOL" AND (DEHYDRATION OR DEHYDRATE) AND ALUMINA

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=> s "cumyl alcohol" and (dehydration or dehydrate) and alumina

```

```

      0 "CUMYL"
      0 "ALCOHOL"
      0 "CUMYL ALCOHOL"
        ("CUMYL" (W) "ALCOHOL")
      0 DEHYDRATION
      0 DEHYDRATE
      1 ALUMINA
L4      0 "CUMYL ALCOHOL" AND (DEHYDRATION OR DEHYDRATE) AND ALUMINA

```

```

=> s "cumyl alcohol" and (dehydration or dehydrate)

```

```

      0 "CUMYL"
      0 "ALCOHOL"
      0 "CUMYL ALCOHOL"
        ("CUMYL" (W) "ALCOHOL")
      0 DEHYDRATION
      0 DEHYDRATE
L5      0 "CUMYL ALCOHOL" AND (DEHYDRATION OR DEHYDRATE)

```

```

=> s styrene and dehydration

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```

      0 STYRENE
      0 DEHYDRATION
L6      0 STYRENE AND DEHYDRATION

```

```

=> s "cumyl alcohol"

```

```

      0 "CUMYL"
      0 "ALCOHOL"
L7      0 "CUMYL ALCOHOL"
        ("CUMYL" (W) "ALCOHOL")

```

```

=> s cumyl and alcohol

```

```

      0 CUMYL
      0 ALCOHOL
L8      0 CUMYL AND ALCOHOL

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=> file caplus

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	1.20	19.12
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-0.78

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FILE 'CAPLUS' ENTERED AT 11:09:44 ON 07 AUG 2007

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They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s cumyl and alcohol  
3472 CUMYL  
266558 ALCOHOL  
174754 ALCOHOLS  
408291 ALCOHOL  
(ALCOHOL OR ALCOHOLS)  
594177 ALC  
195512 ALCS  
693565 ALC  
(ALC OR ALCS)  
853641 ALCOHOL  
(ALCOHOL OR ALC)  
L9 655 CUMYL AND ALCOHOL

=> s l9 and dehydrate  
2493 DEHYDRATE  
1018 DEHYDRATES  
3468 DEHYDRATE  
(DEHYDRATE OR DEHYDRATES)  
L10 0 L9 AND DEHYDRATE

=> s l9 and dehydration  
40 DEHYRATION  
L11 0 L9 AND DEHYRATION

=> s l9 and dehydration  
101722 DEHYDRATION  
433 DEHYDRATIONS  
101833 DEHYDRATION  
(DEHYDRATION OR DEHYDRATIONS)  
L12 41 L9 AND DEHYDRATION

=> s l12 and alumina  
304973 ALUMINA  
2594 ALUMINAS  
305251 ALUMINA  
(ALUMINA OR ALUMINAS)  
L13 7 L12 AND ALUMINA

=> d l13 1-7 abs ibib

L13 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AB PhCMe:CH<sub>2</sub> is prepared in liquid phase by dehydration of PhCMe<sub>2</sub>OH in  
the presence of activated Al<sub>2</sub>O<sub>3</sub> with sp. surface area ≥100 m<sup>2</sup>/g,  
pore volume ≤0.8 mL/g. Thus, PhCMe<sub>2</sub>OH solution was autoclaved with NK  
324D (activated Al<sub>2</sub>O<sub>3</sub>) at 200° for 5 h to give PhCMe:CH<sub>2</sub> with 99.9%  
conversion.

ACCESSION NUMBER: 2006:1005326 CAPLUS  
DOCUMENT NUMBER: 145:357237  
TITLE: Manufacture of α-methylstyrene from  
cumyl alcohol  
INVENTOR(S): Nakayama, Toshio; Suzuki, Akio  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006257022	A	20060928	JP 2005-76610	20050317
PRIORITY APPLN. INFO.:			JP 2005-76610	20050317

L13 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Title process comprises dehydrating cumyl alc. in the presence of activated alumina, wherein the concentration of propylene oxide in a raw material containing cumyl alc. is 0-10,000 ppm. Thus, 1.6 g/min 25% cumyl alc. cumene solution containing no propylene oxide and 105 Ncc/min were flowed through a fixed bed flow reactor filled with activated alumina (liquid hourly space volume 9/h, pressure 1.0 MPaG, 200°), showing dehydration conversion of cumyl alc. 97%.

ACCESSION NUMBER: 2005:300378 CAPLUS  
DOCUMENT NUMBER: 142:355712  
TITLE: Cost effective process for producing  $\alpha$ -methylstyrene  
INVENTOR(S): Tsuji, Junpei  
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
SOURCE: PCT Int. Appl., 13 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005030684	A1	20050407	WO 2004-JP13588	20040910
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005097176	A	20050414	JP 2003-333145	20030925
EP 1674439	A1	20060628	EP 2004-773232	20040910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1856458	A	20061101	CN 2004-80027836	20040910
US 2007043227	A1	20070222	US 2006-573010	20060322
PRIORITY APPLN. INFO.:			JP 2003-333145	A 20030925
			WO 2004-JP13588	W 20040910
REFERENCE COUNT: 8			THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT	

L13 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AB This invention pertains to a method for producing cumene from cumyl alc. and hydrogen with a dehydration catalyst and a hydrogenation catalyst, characterized in that the dehydration catalyst and the hydrogenation catalyst have been alternately packed in a reactor. This invention provides a convenient method to prepare cumene at low cost.

ACCESSION NUMBER: 2005:283444 CAPLUS  
DOCUMENT NUMBER: 142:355029  
TITLE: Process for preparation of cumene

INVENTOR(S): Yamamoto, Jun; Katao, Masaaki  
 PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
 SOURCE: PCT Int. Appl., 14 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005028405	A1	20050331	WO 2004-JP13587	20040910
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005089380	A	20050407	JP 2003-325742	20030918
JP 2005089381	A	20050407	JP 2003-325743	20030918
EP 1666442	A1	20060607	EP 2004-773231	20040910
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1852879	A	20061025	CN 2004-80026940	20040910
US 2006258892	A1	20061116	US 2006-571471	20060313
PRIORITY APPLN. INFO.:			JP 2003-325742	A 20030918
			JP 2003-325743	A 20030918
			WO 2004-JP13587	W 20040910

OTHER SOURCE(S): CASREACT 142:355029  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 AB PhCHMe2 is manufactured by catalytic dehydration of materials containing 4-HOCH2C6H4CHMe2, then catalytic hydrogenation of the resulting PhCMe:CH2 with a part of the reaction mixture being returned to the dehydration process. As the dehydration catalyst, activated Al2O3, and as the hydrogenation catalyst, Pd or Cu may be used.

ACCESSION NUMBER: 2004:871147 CAPLUS  
 DOCUMENT NUMBER: 141:333948  
 TITLE: Low-cost manufacture of cumene in process of manufacturing propylene oxide  
 INVENTOR(S): Ishino, Masaru; Tsuji, Junpei  
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004292336	A	20041021	JP 2003-85108	20030326
PRIORITY APPLN. INFO.:			JP 2003-85108	20030326

L13 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
 AB This document discloses a method for producing  $\alpha$ -methylstyrene wherein  $\alpha$ -methylstyrene is formed from cumyl alc through dehydration in the presence of active alumina

, characterized in that a raw material containing cumyl alc  
contains an organic acid (e.g., formic acid, etc.) in a concentration of 10  
to

1000 weight ppm. The title method gives high conversion (97%) of  
cumyl alc., vs. 46% conversion of cumyl  
alc. in a reference process. Cumyl alc. is  
obtained in the production of propylene oxide.

ACCESSION NUMBER: 2004:817832 CAPLUS  
DOCUMENT NUMBER: 141:314769  
TITLE: Method for producing  $\alpha$ -methylstyrene  
INVENTOR(S): Tsuji, Junpei; Ishino, Masaru  
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
SOURCE: PCT Int. Appl., 10 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004085351	A1	20041007	WO 2004-JP3971	20040323
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
JP 2004292335	A	20041021	JP 2003-85100	20030326
EP 1621527	A1	20060201	EP 2004-722712	20040323
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK			
CN 1764616	A	20060426	CN 2004-80007852	20040323
US 2007118004	A1	20070524	US 2005-550058	20050921
PRIORITY APPLN. INFO.:			JP 2003-85100	A 20030326
			WO 2004-JP3971	W 20040323
REFERENCE COUNT:	8	THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L13 ANSWER 6 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN  
AB A process for producing  $\alpha$ -methylstyrene comprises dehydrating  
cumyl alc. in the presence of activated alumina  
, characterized in that the reaction is conducted in a liquid phase while  
supplying an inert gas to the reaction system.

ACCESSION NUMBER: 2004:565179 CAPLUS  
DOCUMENT NUMBER: 141:89521  
TITLE: Process for producing  $\alpha$ -methylstyrene by  
dehydrating cumyl alcohol  
INVENTOR(S): Tsuji, Junpei; Ishino, Masaru  
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
SOURCE: PCT Int. Appl., 12 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004058668	A1	20040715	WO 2003-JP16075	20031216



W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

JP 2004203754 A 20040722 JP 2002-371733 20021224

AU 2003289104 A1 20040722 AU 2003-289104 20031216

PRIORITY APPLN. INFO.: JP 2002-371733 A 20021224

WO 2003-JP16075 W 20031216

L13 ANSWER 7 OF 7 CAPLUS COPYRIGHT 2007 ACS on STN

AB This invention pertains to a method for producing cumene, characterized by subjecting cumyl alc. and hydrogen to the action of a dehydration catalyst to obtain a mixture comprising the  $\alpha$ -methylstyrene and water generated and hydrogen and subjecting the mixture to the action of a hydrogenation catalyst. By this method, cumyl alc. was converted to cumene with 99% selectivity.

This invention provides an efficient method to make cumene at low cost.

ACCESSION NUMBER: 2004:565178 CAPLUS

DOCUMENT NUMBER: 141:106257

TITLE: Process for preparation of cumene

INVENTOR(S): Tsuji, Junpei; Ishino, Masaru

PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan

SOURCE: PCT Int. Appl., 14 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004058667	A1	20040715	WO 2003-JP16074	20031216
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004250430	A	20040909	JP 2003-197750	20030716
AU 2003289103	A1	20040722	AU 2003-289103	20031216
EP 1598330	A1	20051123	EP 2003-778947	20031216
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1732139	A	20060208	CN 2003-80107455	20031216
US 2006183926	A1	20060817	US 2005-540029	20050622
PRIORITY APPLN. INFO.:			JP 2002-371731	A 20021224
			JP 2003-197750	A 20030716
			WO 2003-JP16074	W 20031216
OTHER SOURCE(S):		CASREACT 141:106257		

=> log hold

COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
37.51	56.63

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-5.46	-6.24

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	ENTRY	SESSION
FULL ESTIMATED COST	37.51	56.63

  

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-5.46	-6.24

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	37.51	56.63

  

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-5.46	-6.24

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FILE COVERS 1907 - 7 Aug 2007 VOL 147 ISS 7  
FILE LAST UPDATED: 6 Aug 2007 (20070806/ED)

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=> s "2-phenylpropan-2-ol"

9245416 "2"  
 924 "PHENYLPROPAN"  
 1 "PHENYLPROPANS"  
 925 "PHENYLPROPAN"  
 ("PHENYLPROPAN" OR "PHENYLPROPANS")  
 9245416 "2"  
 120528 "OL"  
 5173 "OLS"  
 123683 "OL"  
 ("OL" OR "OLS")  
 L14 38 "2-PHENYLPROPAN-2-OL"  
 ("2" (W) "PHENYLPROPAN" (W) "2" (W) "OL")

=> s l14 and (dehydrate or dehydration)

2493 DEHYDRATE  
 1018 DEHYDRATES  
 3468 DEHYDRATE  
 (DEHYDRATE OR DEHYDRATES)  
 101722 DEHYDRATION  
 433 DEHYDRATIONS  
 101833 DEHYDRATION  
 (DEHYDRATION OR DEHYDRATIONS)

L15 0 L14 AND (DEHYDRATE OR DEHYDRATION)

=> s l14 and alumina

304973 ALUMINA  
 2594 ALUMINAS  
 305251 ALUMINA  
 (ALUMINA OR ALUMINAS)

L16 0 L14 AND ALUMINA

=> s l14 and styrene

293775 STYRENE  
 4575 STYRENES  
 294899 STYRENE  
 (STYRENE OR STYRENES)

L17 3 L14 AND STYRENE

=> d l17 1-3 abs ibib

L17 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN

AB Static-headspace (S-HS), headspace-solid phase microextn. (HS-SPME) and headspace sorptive extraction (HSSE) have been applied to the anal. of different grades of benzoin gums Siam and Sumatra. This study led to the identification of 58 compds. by GC-RI and GC-MS: 42 of them were characterized in Siam benzoin gum (grades 3 and 5) and 40 of them in Sumatra (grades B and D). SPME using divinylbenzene/carboxen/polydimethyl siloxane fiber and HSSE are complementary in these conditions and seem to be the most suitable techniques to identify volatile compds. of benzoin gums. S-HS is less sensitive but represents a good method for the quality control of these gums. For this reason it has been applied directly coupled to mass spectrometry for a rapid differentiation between several benzoin gum qualities.

ACCESSION NUMBER: 2006:173878 CAPLUS

DOCUMENT NUMBER: 145:355083

TITLE: Volatile constituents of benzoin gums: Siam and Sumatra, part 2. Study of headspace sampling methods  
 AUTHOR(S): Castel, Cecilia; Fernandez, Xavier; Lizzani-Cuvelier, Louisette; Loiseau, Andre-Michel; Perichet, Christine; Delbecque, Claire; Arnaudo, Jean-Francois

CORPORATE SOURCE: Laboratoire Aromes, Syntheses, Interactions, Faculte des sciences de Nice Sophia-Antipolis, Nice, 06108/2, Fr.

SOURCE: Flavour and Fragrance Journal (2006), 21(1), 59-67

CODEN: FFFJOED; ISSN: 0882-5734

PUBLISHER: John Wiley & Sons Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
 AB The complexes cis-[RuVLO2]2+, cis-[RuVLO2]+ and cis-[RuIIL(MeCN)2]2+ (L = N,N,N',N',3,6-hexamethyl-3,6-diazaoctane-1,8-diamine) were prepared and their structures determined. The two Ru:O bonds in cis-[RuVLO2]2+ are equivalent [1.795(9) Å] and the O-Ru-O angle is 112.0(4)°. In cis-[RuVLO2]+ the two Ru:O distances are 1.751(3) and 1.756(4) Å, and the O-Ru-O angle is 115.1(2)°. The N(MeCN)-Ru-N(MeCN) angle in cis-[RuIIL(MeCN)2]2+ is 86.1(2)°. The cyclic voltammogram of cis-[RuVLO2]2+ in acetonitrile exhibits a reversible one-electron RuVI-RuV couple at 0.53 V vs. Ag-AgNO3 (0.1 mol dm-3). In aqueous solns., proton-coupled electron-transfer redox couples are observed. This complex is capable of oxidizing a wide variety of organic substrates including 2,3-dimethylbutane and adamantane. Oxidation of saturated alkanes occurred preferentially at the tertiary C-H bond.

ACCESSION NUMBER: 1993:72386 CAPLUS  
 DOCUMENT NUMBER: 118:72386  
 TITLE: Synthesis, structure, reactivity and electrochemistry of cis-dioxoruthenium(VI) and -(V) complexes containing N,N,N',N',3,6-hexamethyl-3,6-diazaoctane-1,8-diamine  
 AUTHOR(S): Li, Chi Keung; Che, Chi Ming; Tong, Wai Fong; Tang, Wai Tong; Wong, Kwok Yin; Lai, Ting Fong  
 CORPORATE SOURCE: Dep. Chem., Univ. Hong Kong, Hong Kong  
 SOURCE: Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1972-1999) (1992), (13), 2109-16  
 CODEN: JCDBTBI; ISSN: 0300-9246  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

L17 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2007 ACS on STN  
 AB During the thermal decomposition of cumene hydroperoxide at about 125° in phenylcycloalkanes as solvents, the solvents are attacked, preferably at the tertiary C-H bonds. Up to 70% of oxidation products of the phenylcycloalkanes are obtained. The main oxidation products are the corresponding 1-phenylcycloalkanols, but relatively large amts. of Ph alkyl ketones with the same number of carbon atoms are also formed, probably via a further oxidation of the 1-phenylcycloalkanols.

ACCESSION NUMBER: 1990:630906 CAPLUS  
 DOCUMENT NUMBER: 113:230906  
 TITLE: Studies on the oxidation of phenylcycloalkanes by tertiary hydroperoxides  
 AUTHOR(S): Pritzkow, Wilhelm; Suprun, V. Ya.; Voerckel, Volkmar  
 CORPORATE SOURCE: Carl Schorlemmer Tech. Univ. Leuna-Merseburg, Merseburg, DDR-4200, Ger. Dem. Rep.  
 SOURCE: Journal fuer Praktische Chemie (Leipzig) (1990), 332(3), 381-6  
 CODEN: JPCEAO; ISSN: 0021-8383  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 113:230906

=> FIL STNGUIDE  
 COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
29.27	85.90

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
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	ENTRY	SESSION
CA SUBSCRIBER PRICE	-2.34	-8.58

FILE 'STNGUIDE' ENTERED AT 11:26:05 ON 07 AUG 2007  
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=>

=> log hold

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
1.62	87.52

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION
0.00	-8.58

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NEWS	2	MAY 01	New CAS web site launched
NEWS	3	MAY 08	CA/Capplus Indian patent publication number format defined
NEWS	4	MAY 14	RDISCLOSURE on STN Easy enhanced with new search and display fields
NEWS	5	MAY 21	BIOSIS reloaded and enhanced with archival data
NEWS	6	MAY 21	TOXCENTER enhanced with BIOSIS reload
NEWS	7	MAY 21	CA/Capplus enhanced with additional kind codes for German patents
NEWS	8	MAY 22	CA/Capplus enhanced with IPC reclassification in Japanese patents
NEWS	9	JUN 27	CA/Capplus enhanced with pre-1967 CAS Registry Numbers
NEWS	10	JUN 29	STN Viewer now available
NEWS	11	JUN 29	STN Express, Version 8.2, now available
NEWS	12	JUL 02	LEMBASE coverage updated
NEWS	13	JUL 02	LMEDLINE coverage updated
NEWS	14	JUL 02	SCISEARCH enhanced with complete author names
NEWS	15	JUL 02	CHEMCATS accession numbers revised
NEWS	16	JUL 02	CA/Capplus enhanced with utility model patents from China
NEWS	17	JUL 16	Capplus enhanced with French and German abstracts
NEWS	18	JUL 18	CA/Capplus patent coverage enhanced
NEWS	19	JUL 26	USPATFULL/USPAT2 enhanced with IPC reclassification
NEWS	20	JUL 30	USGENE now available on STN
NEWS	21	AUG 06	CAS REGISTRY enhanced with new experimental property tags
NEWS	22	AUG 06	BEILSTEIN updated with new compounds
NEWS	23	AUG 06	FSTA enhanced with new thesaurus edition

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,  
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FILE 'HOME' ENTERED AT 15:03:17 ON 07 AUG 2007

=> file caplus

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FULL ESTIMATED COST	0.21	0.21

FILE 'CAPLUS' ENTERED AT 15:03:44 ON 07 AUG 2007

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FILE COVERS 1907 - 7 Aug 2007 VOL 147 ISS 7

FILE LAST UPDATED: 6 Aug 2007 (20070806/ED)

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=> s dehydration and alcohol and alumina

101722 DEHYDRATION  
433 DEHYDRATIONS  
101833 DEHYDRATION  
(DEHYDRATION OR DEHYDRATIONS)  
266558 ALCOHOL  
174754 ALCOHOLS  
408291 ALCOHOL  
(ALCOHOL OR ALCOHOLS)  
594177 ALC  
195512 ALCS  
693565 ALC  
(ALC OR ALCS)  
853641 ALCOHOL  
(ALCOHOL OR ALC)

304973 ALUMINA  
2594 ALUMINAS  
305251 ALUMINA

(ALUMINA OR ALUMINAS)

L1 918 DEHYDRATION AND ALCOHOL AND ALUMINA

=> tertiary and activated

TERTIARY IS NOT A RECOGNIZED COMMAND

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"HELP COMMANDS" at an arrow prompt (=>).

=> s l1 and tertiary and activated

107642 TERTIARY

13 TERTIARIES

107648 TERTIARY

(TERTIARY OR TERTIARIES)

531333 ACTIVATED

L2 1 L1 AND TERTIARY AND ACTIVATED

=> d l2 abs ibib

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

AB The hydration of dialkylethynylcarbinols (I) and the reactivity of the resulting HO ketones (acetalalkylcarbinols) is reported. Acetyldimethylcarbinol (IA), b160 139°, acetylisobutylmethylcarbinol (IB), b100 110° and acetylmethylcarbinol, b. 151°, are prepared by hydration of the corresponding I with HgSO<sub>4</sub>-H<sub>2</sub>SO<sub>4</sub>, first at room temperature, then 1 h. at 100°. Ethynylcyclohexanol yields 56% of a product, b5 68-70° (name not stated but probably acetylcyclohexanol). Byproducts of the hydration of HC.tplbond.CC(OH)Me<sub>2</sub> (II) are a liquid (III), C<sub>10</sub>H<sub>16</sub>O<sub>2</sub>, b12 78-80°, b14 80-1°, b25 90-1°, n<sub>20</sub>D 1.4530, and d<sub>20</sub> 0.9449, and a higher-boiling fraction (IV), C<sub>10</sub>H<sub>18</sub>O<sub>3</sub>, from which sep. crystals, m. 86° (prisms from hexane). III is resistant to acetylation and contains 1 double bond; semicarbazone, m. 181° (from MeOH). III is not the dimer of MeCOC(:CH<sub>2</sub>)Me. IV is also resistant to acetylation and does not form a semicarbazone or dinitrophenylhydrazone. The acetate (V) of II, b110 75-7°, b. 125-6°, is obtained in 57.5% yield from II, Ac<sub>2</sub>O, and H<sub>2</sub>SO<sub>4</sub>; HC.tplbond.CC(:CH<sub>2</sub>)Me is obtained in 33.3% yield as a byproduct. With AcCl, II yields 67.7% V and 15% acetyldimethylcarbiny acetate (VI), b5 45°, n<sub>20</sub>D 1.4190, d<sub>20</sub> 1.0054. Hydration of V at room temperature yields 26% VI, and at reflux temperature 87% acetate of IA. Hydrogenation of IA with Raney Ni at 1100 lb./sq. in. yields trimethyl-1,2-ethanediol (VII), b5 65°, quant.; at 200 lb./sq. in. 82% VII and some 3-methyl-2-butanol, b. 115°, are obtained. Hydrogenation of IB at 1000 lb./sq. in. yields 3,5-dimethyl-2,3-hexanediol (VIII), b7 84-5°, b50 125-7°, d<sub>20</sub> 1.0157, n<sub>20</sub>D 1.4455; at 200 lb./sq. in. 57% of VIII and 43% 3,5-dimethyl-2-hexanol, b. 160°, are obtained. Dehydration of VII at its b.p. with iodine yields a mixture, b. 94-100°, d<sub>20</sub> 0.8132 and n<sub>20</sub>D 1.3912, which contains 8.4% of MeCOPr-iso (IX) (p-nitrophenylhydrazone, m. 109-11°) and 11% of methylisopropenylcarbinol (X). Dehydration of VII over activated alumina at 275° yields 53% IX and 25.3% X. Dehydration of VIII with iodine yields a mixture, b. 112-56°, containing 30% 3,5-dimethyl-2-hexanone. VII with paraldehyde and H<sub>3</sub>PO<sub>4</sub> yields 47% 2,4,4,5-tetramethyl-1,3-dioxolane, b. 102-5°, n<sub>20</sub>D 1.3975, d<sub>20</sub> 0.8508, and with AcCl in C<sub>5</sub>H<sub>5</sub>N-CHCl<sub>3</sub> VII yields 60% diacetate, b23 62-3°, d<sub>20</sub> 1.0126, n<sub>20</sub>D 1.42065. Hydrogenation of VI at atmospheric pressure yields 73% the tertiary acetate of VII, b13 62-3°, d<sub>20</sub> 1.001, n<sub>20</sub>D 1.4165. Me 1-methyl-Δ<sup>3</sup>-tetrahydrobenzoate (XI), b100 116-17°, d<sub>20</sub> 0.9508 n<sub>20</sub>D 1.4581, is obtained in 68% yield from CH<sub>2</sub>:CMeCO<sub>2</sub>Me (XII) and (CH:CH<sub>2</sub>)<sub>2</sub> (XIII) at 150°; hydrolysis of XI yields 84% free acid (XIV), prisms from

ligroine, m. 78-9°. 2-Ethylhexyl ester of XIV, b5 125-6°, n20D 1.4528, d20 0.8756, is analogously prepared from CH<sub>2</sub>:CMeCO<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>EtBu and XIII. 1-Methyl-Δ<sup>3</sup>-tetrahydrobenzoyl chloride, b30 100°, is prepared from XIV and SO<sub>2</sub>Cl<sub>2</sub>. Secondary 1-methyl-3-cyclohexene-1-carboxylate of VII, b4 105-7°, d20 1.0233, n20D 1.4690, is prepared in poor yield from VII, XI and NaOMe. Monomethacrylate of VII, b6 76-8°, n20D 1.4456, d20 0.9945, is similarly prepared from XII and VII. Δ<sup>3</sup>-Tetrahydrobenzonitrile, b4 58-9°, is obtained in quant. yield from CH<sub>2</sub>:CHCN and XIII heated 4 h. at 120°; hydrolysis with KOHMeOH yields 67% Δ<sup>3</sup>-tetrahydrobenzoic acid, b6 98-100°; Me ester, b100 116°, d20 1.4602 (probably given incorrectly) and n20D 1.4602; acid chloride (XV), b30 96-7°. Secondary Δ<sup>3</sup>-tetrahydrobenzoate of VIII, b6 135-7°, n20D 1.4741, d20 1.0138, is obtained in 72.5% yield from XV and VIII. Combined amination and catalytic reduction of acetyldialkylcarbinols (XVA) is conducted with Raney Ni at 70-100° and 1000 lb./sq. in. with excess NH<sub>3</sub>. 2-Amino-3-methyl-3-butanol (XVI), m. 21° (hydrate with 50% H<sub>2</sub>O, m. 25°), is thus prepared from Me<sub>2</sub>CHAc. Salts of XVI have good emulsifying properties; the stearate is a solid, the oleate an oil, and the phenylacetate, m. 120° (needles from PhMe-methylcyclohexane). Azeotropic distillation of XVI with PhCH<sub>2</sub>Ac in C<sub>6</sub>H<sub>6</sub> yields 75% of a product, C<sub>14</sub>H<sub>21</sub>ON, b16 149-50°. 2-Mercapto-4,5,5-trimethyl-2-oxazoline, m. 122° (from alc.), is prepared from XVI and CS<sub>2</sub> or CSCl<sub>2</sub> in 95% yield. Methylation of XVI with HCHO and HCO<sub>2</sub>H yields 83% 3-methyl-2-methylamino-3-butanol (XVII), b25 64°, and XVI in an autoclave with EtBr and ZnCO<sub>3</sub> yields 40% 2-diethylamino-3-methyl-3-butanol, b25 84°. Other amino alcs. prepared by reductive amination are 2-amino-3-ethylbutanol, b100 112-15°, d20D 1.4523, d20 0.9802; 2-amino-3-isobutyl-3-butanol, b5 65-8°; bis(3-isobutyl-3-hydroxy-2-butyl)amine, b5 125-35°, n20D 1.4537, d20 0.9081; 1-(aminoethyl)cyclohexanol, b50 133°, n20D 1.4485, d20 0.9135; and XVII, b100 105-10°, n20D 1.4875, d20 0.9013. XVA also yields Schiff bases, Me<sub>2</sub>C(OH)CMe:NR, with primary amines (R, b.p./mm., n30D d30): Ph, 142°/28, 1.5164, 0.9850; o-MeC<sub>6</sub>H<sub>4</sub>, 144-5°/26, 1.5150, 0.9784; o-MeOC<sub>6</sub>H<sub>4</sub>, 160-2°/23, 1.5234, 1.0254; p-MeOC<sub>6</sub>H<sub>4</sub>, 174°/23, 1.5284, 1.0386; o-ClC<sub>6</sub>H<sub>4</sub>, 155°/20, 1.5487, 1.1000; cyclohexyl, 125°/23, 1.4589, 0.9150. 2-Anilino-3-methyl-3-butanol, b23 150°, n20D 1.5338, d20 1.0010, is prepared in quant. yield by hydrogenation of the anil (XIIIA) of Me<sub>2</sub>C(OH)Ac (XVIII). XIIIA is prepared in 25% yield from XVIII and PhNH<sub>2</sub>. XVI and 4-chloro-1-methylanthraquinone at 120° yield 1-methyl-4-(2-hydroxy-1,2-dimethylpropylamino)anthraquinone, brown-red crystals from alc. or C<sub>6</sub>H<sub>6</sub>, m. 142°; XVI and 1,5-dichloroanthraquinone yield 1,5-bis(2-hydroxy-1,2-dimethylpropylamino)anthraquinone, violet blue crystals, m. 216°.

ACCESSION NUMBER: 1954:24742 CAPLUS  
DOCUMENT NUMBER: 48:24742  
ORIGINAL REFERENCE NO.: 48:4426g-i,4427a-i  
TITLE: Acetylene studies. III. Preparation and reactions of the acetyldialkylcarbinols  
AUTHOR(S): Bergmann, Ernst D.; Herman, Daniel F.  
CORPORATE SOURCE: Israeli Ministry Defence, Tel-Aviv  
SOURCE: Journal of Applied Chemistry (1953), 3, 42-8  
CODEN: JACHAU; ISSN: 0021-8871  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 48:24742

=> FIL STNGUIDE  
COST IN U.S. DOLLARS  
FULL ESTIMATED COST

SINCE FILE	TOTAL
ENTRY	SESSION
15.70	15.91



DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-0.78

-0.78

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=> d hist

(FILE 'HOME' ENTERED AT 15:03:17 ON 07 AUG 2007)

FILE 'CAPLUS' ENTERED AT 15:03:44 ON 07 AUG 2007

L1 918 S DEHYDRATION AND ALCOHOL AND ALUMINA  
L2 1 S L1 AND TERTIARY AND ACTIVATED

FILE 'STNGUIDE' ENTERED AT 15:07:05 ON 07 AUG 2007

=> l1 and "activated alumina"

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=> s l1 and "activated alumina"

0 DEHYDRATION  
0 ALCOHOL  
1 ALUMINA  
0 "ACTIVATED"  
1 "ALUMINA"  
0 "ACTIVATED ALUMINA"  
("ACTIVATED" (W) "ALUMINA")

L3 0 L1 AND "ACTIVATED ALUMINA"

=> s l1 and catalyst

0 DEHYDRATION  
0 ALCOHOL  
1 ALUMINA  
7 CATALYST  
6 CATALYSTS  
8 CATALYST  
(CATALYST OR CATALYSTS)

L4 0 L1 AND CATALYST

=> s l1

0 DEHYDRATION  
0 ALCOHOL  
1 ALUMINA  
L5 0 DEHYDRATION AND ALCOHOL AND ALUMINA

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.84

16.75

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

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=> s l1

101722 DEHYDRATION  
433 DEHYDRATIONS  
101833 DEHYDRATION  
(DEHYDRATION OR DEHYDRATIONS)  
266558 ALCOHOL  
174754 ALCOHOLS  
408291 ALCOHOL  
(ALCOHOL OR ALCOHOLS)  
594177 ALC  
195512 ALCS  
693565 ALC  
(ALC OR ALCS)  
853641 ALCOHOL  
(ALCOHOL OR ALC)  
304973 ALUMINA  
2594 ALUMINAS  
305251 ALUMINA  
(ALUMINA OR ALUMINAS)  
L6 918 DEHYDRATION AND ALCOHOL AND ALUMINA

=> s l6 and catalyst

770965 CATALYST  
768408 CATALYSTS  
985295 CATALYST  
(CATALYST OR CATALYSTS)

L7 744 L6 AND CATALYST

=> s l7 and "activated alumina"

531333 "ACTIVATED"  
304973 "ALUMINA"  
2594 "ALUMINAS"  
305251 "ALUMINA"  
( "ALUMINA" OR "ALUMINAS" )  
3034 "ACTIVATED ALUMINA"  
( "ACTIVATED" (W) "ALUMINA" )

L8 27 L7 AND "ACTIVATED ALUMINA"

=> d l8 1-27 abs ibib

L8 ANSWER 1 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB PhCMe:CH<sub>2</sub> is prepared in liquid phase by dehydration of PhCMe<sub>2</sub>OH in the presence of activated Al<sub>2</sub>O<sub>3</sub> with sp. surface area ≥100 m<sup>2</sup>/g, pore volume ≤0.8 mL/g. Thus, PhCMe<sub>2</sub>OH solution was autoclaved with NK

324D (activated Al<sub>2</sub>O<sub>3</sub>) at 200° for 5 h to give PhCMe:CH<sub>2</sub> with 99.9% conversion.

ACCESSION NUMBER: 2006:1005326 CAPLUS  
DOCUMENT NUMBER: 145:357237  
TITLE: Manufacture of  $\alpha$ -methylstyrene from cumyl alcohol  
INVENTOR(S): Nakayama, Toshio; Suzuki, Akio  
PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006257022	A	20060928	JP 2005-76610	20050317
PRIORITY APPLN. INFO.:			JP 2005-76610	20050317

L8 ANSWER 2 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB A process for producing  $\alpha$ -methylstyrene comprises dehydrating cumyl alc. in the presence of activated alumina, characterized in that the reaction is conducted in a liquid phase while supplying an inert gas to the reaction system.

ACCESSION NUMBER: 2004:565179 CAPLUS  
DOCUMENT NUMBER: 141:89521  
TITLE: Process for producing  $\alpha$ -methylstyrene by dehydrating cumyl alcohol  
INVENTOR(S): Tsuji, Junpei; Ishino, Masaru  
PATENT ASSIGNEE(S): Sumitomo Chemical Company, Limited, Japan  
SOURCE: PCT Int. Appl., 12 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004058668	A1	20040715	WO 2003-JP16075	20031216
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2004203754	A	20040722	JP 2002-371733	20021224
AU 2003289104	A1	20040722	AU 2003-289104	20031216
PRIORITY APPLN. INFO.:			JP 2002-371733	A 20021224
			WO 2003-JP16075	W 20031216

L8 ANSWER 3 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB The dehydration of C<sub>4</sub> alkanols conjugated with a positional and skeletal isomerization of the formed C<sub>4</sub> alkenes was studied. Thermally and with diluted sulfuric acid activated  $\gamma$ - aluminas (A and AA catalysts) were used in a fixed bed reactor at 300-470°C, atmospheric pressure and a catalyst loading GHSW=0.12-0.8 g cm<sup>-3</sup> h<sup>-1</sup>. Under these conditions all the C<sub>4</sub> alkanols were totally dehydrated and underwent subsequent isomerization, eventually yielding especially propene. Depending on the original alc. and

reaction conditions, isobutene was formed mainly from isobutanol and tert-butanol; cis-2-butene was generated dominantly in the case of 2-butanol. The lowest yield of isobutene was in the case of 1-butanol. Distribution of individual butenes is discussed following reaction steps necessary for obtaining a certain butene isomer and its thermodyn. preference. The results showed the possibility to obtain mainly isobutene from all the C4 alkanols using a simple dehydration -isomerization catalyst prepared by the acidification of  $\gamma$ -alumina.

ACCESSION NUMBER: 2001:389497 CAPLUS  
DOCUMENT NUMBER: 135:195819  
TITLE: Dehydration of C4 alkanols conjugated with a positional and skeletal isomerisation of the formed C4 alkenes  
AUTHOR(S): Macho, V.; Kralik, M.; Jurecekova, E.; Hudec, J.; Jurecek, L.  
CORPORATE SOURCE: Faculty of Industrial Technologies, Trencin University, Puchov, 020 32, Slovakia  
SOURCE: Applied Catalysis, A: General (2001), 214(2), 251-257  
CODEN: ACAGE4; ISSN: 0926-860X  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Conversions of methanol, ethanol, and iso-propanol were carried out using activated alumina-pillared montmorillonite (BP-PILC), beidellite/montmorillonite (FAZA), and saponite (ATOS)-based PILCs obtained from  $[Al_{13}O_4(H_2O)_{12}(OH)_{24}]^{7+}$  Keggin-ion. Product outcomes for MeOH differ from those on smectite clays themselves and on alumina (or transition metal ion oxides): all give rise to di-Me ether, rather than Me formate or formic acid. Systematic study of conversion, yields and selectivity for cation-exchanged FAZA show that the large changes observed must be ascribed to both steric effects and selective blocking of proton-containing active sites. The latter are most important in Ni<sup>2+</sup>-exchanged FAZA-containing catalysts and are attributed to generation of highly acidic Lewis sites, e.g. hydrocarbons alone (in a distribution similar to the MTG process) are obtained on Ni<sup>2+</sup>-FAZA. Apart from ethene and acetaldehyde, EtOH conversion also gives di-Et ether, not obtained on smectites themselves, and produced via a bimol. reaction. The total dehydration/dehydrogenation ratio varies in the order BP-PILC > FAZA >> AZA=ATOS, BP-PILC being the most acidic and most selective. Dehydration and dehydrogenation activity with temperature go through a crossover point. This is ascribed to iso-acidity, i.e. the iso-acidic point is where Lewis and Broensted acids are equally strong. Trends in iso-acidity with metal-ion exchange in FAZA materials suggest that the Lewis acid sites are at the alumina pillar. Detailed study of reaction kinetics and contact times leads to the conclusion that saponite surfaces have higher dehydration activity than those in montmorillonite.

ACCESSION NUMBER: 1998:288621 CAPLUS  
DOCUMENT NUMBER: 129:55684  
TITLE: PLS vs. zeolites as sorbents and catalysts.  
5. Evidence for Broensted/Lewis acid crossover and high acidity in conversions of C1-3 alcohols in some alumina-pillared smectite clays  
AUTHOR(S): Raimondo, Mariarosa; De Stefanis, Adriana; Perez, Giorgio; Tomlinson, Anthony A. G.  
CORPORATE SOURCE: Monterotondo Staz., Istituto di Cromatografia, CNR, Rome, 00016, Italy  
SOURCE: Applied Catalysis, A: General (1998), 171(1), 85-97  
CODEN: ACAGE4; ISSN: 0926-860X  
PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal  
LANGUAGE: English  
REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB Pure saturated C4-12 carboxylic acids were pyrolyzed at a weight space velocity of .apprx.0.46 h<sup>-1</sup> over activated alumina at 450° and atmospheric pressure. The carboxylic acids produced sym. ketones that further degraded to Me ketones and hydrocarbons presumably via a  $\gamma$ -hydrogen transfer mechanism. The lower molar mass carboxylic acids yielded greater percentages of sym. ketones than the higher molar mass carboxylic acids. The organic liquid pyrolyzate of butanoic acid contained 78% 4-heptanone, whereas the organic liquid pyrolyzate of dodecanoic acid contained negligible amts. of diundecyl ketone and greater percentages of hydrocarbons. Further pyrolysis of ketone-containing product yielded hydrocarbons. Virtually all of the carboxylic acid degraded to hydrocarbons via sym. ketone. Monoenes were the major hydrocarbon products from ketones and were formed by  $\gamma$ -hydrogen rearrangement, and/or reduction (disproportionation) to alc. followed by dehydration. Me ketones had a distinct preference for reduction to monoenes (containing the same number of carbon atoms) following the latter route.

The results provide a pathway for the conversion of lipid deoxygenation to hydrocarbon fuels.

ACCESSION NUMBER: 1995:776204 CAPLUS  
DOCUMENT NUMBER: 123:148410  
TITLE: Pathway for the Catalytic Conversion of Carboxylic Acids to Hydrocarbons over Activated Alumina  
AUTHOR(S): Leung, Anna; Boocock, David G. B.; Konar, Samir K.  
CORPORATE SOURCE: Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, M5S 1A4, Can.  
SOURCE: Energy & Fuels (1995), 9(5), 913-20  
CODEN: ENFUEM; ISSN: 0887-0624  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L8 ANSWER 6 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

GI For diagram(s), see printed CA Issue.

AB In the preparation of 2,3-dihydro 4H-pyran by catalytic dehydration of tetrahydrofurfuryl alc. (I) using  $\gamma$ -alumina (Sumitomo activated alumina KAG-814, 80-100 or 150-200 mesh), deterioration of the catalyst was studied. In the earlier period of the reaction, degree of deterioration  $\phi$  at time  $\theta$  is:  $\log \phi = \log(r/r_0) = -\alpha\theta$ , where  $r$  and  $r_0$  are dehydration rate of deteriorated and undeteriorated catalyst, resp., and  $\alpha$  is constant. At 350°,  $\alpha = 6.5 \times 10^{-3}$  C, where  $C$  is concentration of I. For 350-500°,  $\alpha = 1.8 \exp(-3.4 + 103/T)$ , where  $T$  is absolute temperature. Among impurities in I, furfuryl alc. (II) deteriorated the catalyst markedly. For II,  $\alpha = 2.4 \times 10^{-3}$  at 350°, and  $\alpha = 3.8 \times 10^{-3} \exp(-4.7 + 103/T)$  for 315-440°. The rate of deterioration of the catalyst by II was about 400 times as large as that by I.

ACCESSION NUMBER: 1968:506411 CAPLUS  
DOCUMENT NUMBER: 69:106411  
TITLE: Dihdropyran. III. Deterioration of the  $\gamma$ -alumina catalyst in the dehydration of tetrahydrofurfuryl alcohol  
AUTHOR(S): Ishizuka, Ichiro; Ueda, Shiro; Sumimoto, Shinzaburo  
CORPORATE SOURCE: Shionogi and Co., Ltd., Osaka, Japan

SOURCE: Kogyo Kagaku Zasshi (1968), 71(4), 516-18  
CODEN: KGKZA7; ISSN: 0368-5462  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

L8 ANSWER 7 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB cf. CA 54, 21963g. Catalytic dehydration of EtOH to C<sub>2</sub>H<sub>4</sub> was studied in a flow reactor over activated alumina at 336-465° and atmospheric pressure with N as the inert carrier. Mole fractions of EtOH in the feed ranged from 0.1-0.35, C<sub>2</sub>H<sub>4</sub> from 0.08-0.14, and H<sub>2</sub>O from 0.02-0.08. Surface reaction between an adsorbed EtOH mol. and an adjacent vacant active center giving rise to adsorbed H<sub>2</sub>O and C<sub>2</sub>H<sub>4</sub> mols. was found to be the rate-controlling step. The recommended rate equation is  $r = \frac{CKaPa}{(1 + KaPa + KbPb + KcPc)^2}$  g. moles/min. l., where  $C = 7.95 + 10^{-3} e^{-5520/T}$  g. moles/min. l.,  $Ka = 4.70 e^{-765.9/T}$  atmospheric<sup>-1</sup>,  $Kb = 8.64 + 10^{-3} e^{4779/T}$  atmospheric<sup>-1</sup>,  $Kc = 8.58 + 10^{-4} e^{5596/T}$  atmospheric<sup>-1</sup>, and Pa, Pb, and Pc the partial pressures in atmospheric of EtOH, H<sub>2</sub>O, and C<sub>2</sub>H<sub>4</sub>, resp. The average deviation of exptl. and calculated rates was 19.6%.

ACCESSION NUMBER: 1965:471024 CAPLUS  
DOCUMENT NUMBER: 63:71024  
ORIGINAL REFERENCE NO.: 63:13001d-f  
TITLE: Kinetics of catalytic dehydration of ethanol over activated alumina. II  
AUTHOR(S): Roy, N. C.; Bose, N. K.  
CORPORATE SOURCE: Calcutta Univ.  
SOURCE: Indian Chemical Engineer (1959-1993) (1964), 6(2), 36-40  
CODEN: ICHEAF; ISSN: 0019-4506  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L8 ANSWER 8 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB The factors affecting the activity of the Al<sub>2</sub>O<sub>3</sub> catalyst for dehydration reactions, the cause of the fall in the Al<sub>2</sub>O<sub>3</sub> activity, the changes brought about in the catalyst during regeneration, and the effect of these changes on the catalyst activity are briefly surveyed. Factors responsible for loss of catalyst efficiency with time during the dehydration are deposition of C on the catalyst, sintering of the catalyst and corresponding reduction of available surface area, and poisoning of Al<sub>2</sub>O<sub>3</sub> by steam, which causes structural poisoning, alteration of the hydroxyl concentration on the surface of the catalyst, and deactivation of the active sites. During regeneration, the catalyst activity is regained, due to burning of the deposited C, the formation of new active centers during heating due to loss of hydroxyl groups, and reduction of excess moisture from the catalyst surface. On the other hand, high temps. encountered during regeneration bring about sintering and hence loss in activity, due to loss in available surface area. The rate of loss of catalyst activity with time during dehydration is not constant. The best way to measure the catalyst activity of a particular Al<sub>2</sub>O<sub>3</sub> sample is to study its performance on a laboratory type converter, keeping all the factors, as dimensions of the tube, temperature of the catalyst bed, the temperature, and the feed rate of alc. vapor constant. The change in alc. conversion over different Al<sub>2</sub>O<sub>3</sub> samples would be a measure of the catalytic activity of the samples. 22 references.

ACCESSION NUMBER: 1964:82395 CAPLUS  
DOCUMENT NUMBER: 60:82395  
ORIGINAL REFERENCE NO.: 60:14375d-f  
TITLE: Deterioration in the activity of activated alumina during the dehydration of ethanol to ethylene  
AUTHOR(S): Pargal, H. K.; Kanga, S. H.  
CORPORATE SOURCE: Alkali Chem. Corp. India Ltd., Rishra

SOURCE: Chemical Age of India (1964), 15(1), 117-23  
CODEN: CHAIAT; ISSN: 0009-2320  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 9 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB The hypothesis of Beranek, et al. (CA 56, 1359i), that the pyridine-adsorbing active sites of an Al<sub>2</sub>O<sub>3</sub> surface are important in isomerization reactions but not in dehydration of alcs .., has limited validity. Al<sub>2</sub>O<sub>3</sub> samples, precipitated with NH<sub>4</sub>OH from 5% Al sulfate solution and activated at 400, 600, 800, and 900° (sp. surface area 249, 186, 162, and 77.5 sq.m./g., resp.) show high capacity for sorption of C<sub>5</sub>H<sub>5</sub>N (0.055 to 0.018 millimoles/g., resp.) and are catalytically active in dehydration of EtOH at 380°. There is a distinct relation between C<sub>2</sub>H<sub>4</sub> yield (0.508 to 0.288 millimoles/min. g., resp.) and sorption of pyridine.

ACCESSION NUMBER: 1963:451681 CAPLUS  
DOCUMENT NUMBER: 59:51681  
ORIGINAL REFERENCE NO.: 59:9359d-e  
TITLE: Active sites on activated alumina surface  
AUTHOR(S): Kuczynski, Wienczyslaw  
CORPORATE SOURCE: Univ. Poznan, Pol.  
SOURCE: Roczniki Chemii (1963), 37, 505-6  
CODEN: ROCHAC; ISSN: 0035-7677  
DOCUMENT TYPE: Journal  
LANGUAGE: English

L8 ANSWER 10 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB The products of the dehydration of 2-aminoethanol (I) at 350° with an activated alumina catalyst were chromatographed with BuOH-HOAc-H<sub>2</sub>O as solvent and analyzed with alc. isatin. Ethylenediamine, piperazine (II), 2,5-dimethylpiperazine, morpholine, pyrrole, I, and possibly pyrazine (III) were identified. Dehydration of I at 500° produced some crystalline III. The formation of 1 mole II from 2 moles I was believed to be reversible. From the possible intermediate, vinylamine, pyrrole could be formed, dimerization would give II, and hydrolysis would give NH<sub>3</sub> and AcH. Decomposition of ethylenimine would yield HN:CH<sub>2</sub>, which would polymerize to urotropine. Cleavage of I to NH<sub>3</sub> and ethylene oxide, which could react with I to form diethanolamine, would explain the formation of morpholine. Decomposition of ethylene oxide to CH<sub>2</sub>O and CH<sub>2</sub> would explain formation of the 2,5-dimethyl derivative of II. The reaction of NH<sub>3</sub> with AcH would yield pyrrole. NH<sub>3</sub> would react with I to form ethylenediamine.

ACCESSION NUMBER: 1962:45508 CAPLUS  
DOCUMENT NUMBER: 56:45508  
ORIGINAL REFERENCE NO.: 56:8541f-i  
TITLE: Reaction mechanism for the catalytic dehydration of 2- aminoethanol determined by chromatography  
AUTHOR(S): Lattes, Armand; de Savignac, Alain; Carles, Jules  
SOURCE: Compt. Rend. (1961), 253, 2714-16  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 11 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB cf. Barrer, CA 39, 24423. -A complete acid form of an open zeolite (found: Na, 0.08) of high thermal stability (800°) was prepared The H form of synthetic Na mordenite (I) has high intracryst. catalytic activity; surface area of 400-500 sq. m./g. (B.E.T. method); adsorption properties between those of zeolite A and faujasite; catalytic properties similar to those of zeolite 10X (B., et al., Chimia 9, 118-9(1955); Breck, et al., CA 51, 5498a; Weisz and Frilette, CA 54, 17023b). Cation exchange with I operates over the entire pH range. Exchanges of bi- and trivalent cations, e.g. Mg<sup>++</sup>, Ba<sup>++</sup>, and Al<sup>+++</sup>, can be done without change in crystal

structure from the parent material. Catalytic cracking properties of I are similar to those of 10X. In cracking n-decane (1 hr., 450°, space velocity 0.5/hr.) conversion was with I 36%, with silica-alumina (II) 19%; isobutane-n-butane ratio I = 1.3, II = 3.3; paraffin-olefin ratio I = 4.6, II = 3.3. At 300° n-hexadecane cracked with I at 350°, 6 times more light hydrocarbons (up to C5) were obtained than when II was used. Micro-scale dehydration of EtOH at 340° with activated alumina gave equally ethylene and ether but at 250° with I only ethylene was obtained. Cracking with Mg-exchanged I and isomerization of cyclohexene over I and its Al-exchanged derivs. were observed.

ACCESSION NUMBER: 1962:35459 CAPLUS  
DOCUMENT NUMBER: 56:35459  
ORIGINAL REFERENCE NO.: 56:6702g-i  
TITLE: New intracrystalline catalyst  
AUTHOR(S): Keough, Allen H.; Sand, L. B.  
CORPORATE SOURCE: Norton Co., Worcester, MA  
SOURCE: Journal of the American Chemical Society (1961), 83, 3536-7  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 12 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB cf. CA 52, 14522b. The rate of dehydration of EtOH over activated Al<sub>2</sub>O<sub>3</sub> in a flow system with N as carrier is given by  $\ln [1/(1 - Y)] - [X_0Y/(1 + X_0)] = kp\pi/(1 + X_0) V_0$ , where X<sub>0</sub> = mole fraction of alc. in feed, Y = fraction converted, V<sub>0</sub> = space velocity, millimoles/(min.)(cc. of catalyst), kp = 1st-order reaction constant, millimoles/(min.)(cc. of catalyst)(atmospheric). This reduces to the equation of Anti-pina, et al. (CA 42, 2850d) when  $\alpha = kp\pi/(1 + X_0)$  and  $\beta = X_0/(1 + X_0)$ . Values of kp were determined at 336°-465° at an alc. concentration in the feed of 0.1-0.359 mole fraction. At X<sub>0</sub> = 0.1, kp varied from 0.92 at 336° to 5.0 at 465°; at X<sub>0</sub> = 0.359, kp varied from 0.381 to 3.67. The apparent energy of activation is 13,900 cal./mole, regardless of the concentration of the alc. in the feed.

ACCESSION NUMBER: 1960:115365 CAPLUS  
DOCUMENT NUMBER: 54:115365  
ORIGINAL REFERENCE NO.: 54:21963g-i  
TITLE: Kinetics of catalytic dehydration of ethanol on activated alumina  
AUTHOR(S): Roy, N. C.; Bose, N. K.  
CORPORATE SOURCE: Univ. Calcutta  
SOURCE: Trans. Indian Inst. Chem. Engs. (1959), Volume Date 1958-1959, 11, 3-10  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 13 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Conversion of EtOH to C<sub>2</sub>H<sub>4</sub> over Al<sub>2</sub>O<sub>3</sub> at 347° and 367° in the presence of N gave data conforming to the equation of Antipina, et al. (C.A. 42, 2850d).

ACCESSION NUMBER: 1958:82280 CAPLUS  
DOCUMENT NUMBER: 52:82280  
ORIGINAL REFERENCE NO.: 52:14522b  
TITLE: Catalytic dehydration of ethanol on activated alumina  
AUTHOR(S): Roy, N. C.; Bose, N. K.  
CORPORATE SOURCE: Calcutta Univ.  
SOURCE: Science and Culture (1957), 23, 55-6  
CODEN: SCINAL; ISSN: 0036-8156  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable



L8 ANSWER 14 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB A semitech. method was described for the preparation of propene by dehydration of iso-PROH at 330° with a catalyst.  
A mixture of Al<sub>2</sub>O<sub>3</sub> and Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> proved less efficient than "activated alumina" (Peter Spence) giving a yield of 85% and 92%, resp. Details are given in original.

ACCESSION NUMBER: 1955:56412 CAPLUS  
DOCUMENT NUMBER: 49:56412  
ORIGINAL REFERENCE NO.: 49:10829h-i  
TITLE: Preparation of propene from isopropanol  
AUTHOR(S): Verstappen, J. J.; Waterman, H. I.  
CORPORATE SOURCE: Tech. Hogeschool, Delft, Neth.  
SOURCE: Ingenieur (1954), 66, 77-9  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 15 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB Three naturally occurring bauxites from Madras were tested for dehydrating efficiency, after activation in a muffle furnace at 450° for 4 hrs. The yields averaged better than 90% at space velocities even above 1 g. alc. per cc. bauxite per hr. Imported activated alumina gave 90% conversion at 0.75 g./cc./hr. Higher velocities resulted in lower conversions. These catalysts gave higher percentages of ethylene in the product. These natural catalysts compare favorably with synthetic ones.

ACCESSION NUMBER: 1954:40326 CAPLUS  
DOCUMENT NUMBER: 48:40326  
ORIGINAL REFERENCE NO.: 48:7221i,7222g-h  
TITLE: Indian bauxites for the dehydration of alcohol to ethylene  
AUTHOR(S): Pai, M. S.; Joshi, H. K.  
SOURCE: Current Science (1953), 22, 338  
CODEN: CUSCAM; ISSN: 0011-3891  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 16 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB Aliphatic alcs. are dehydrated to 1-olefins in the presence of an activated alumina and bauxite catalyst having the composition (in % by weight): Al<sub>2</sub>O<sub>3</sub> 58-70, Fe<sub>2</sub>O<sub>3</sub> 10-16, SiO<sub>2</sub> 6-9, TiO<sub>2</sub> 1-4.5, ignition loss at 1800°F. 10-18. BuOH was converted at 730°F. and under vapor-phase conditions in the presence of such a catalyst to 75% 1- and 20% 2-butene.

ACCESSION NUMBER: 1954:18397 CAPLUS  
DOCUMENT NUMBER: 48:18397  
ORIGINAL REFERENCE NO.: 48:3381h-i  
TITLE: Dehydration of alcohols to olefins  
INVENTOR(S): Cutcher, Haskell W.; Ray, Charles A.  
PATENT ASSIGNEE(S): Phillips Petroleum Co.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2636057		19530421	US 1949-111969	19490823

L8 ANSWER 17 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB Compds. of the formula CH<sub>2</sub>:CHC<sub>6</sub>H<sub>4</sub>SiR<sub>3</sub> are prepared by the reaction of the corresponding silylaryl Mg halide with acetaldehyde (I) followed by dehydration. Thus, 30 g. Mg is added to 275 g. p-trimethylsilylbromobenzene in 430 g. ether. To this mixture is added 60 g. I in 1 l. ether and stirred for 2 hrs. at -10° to yield 141 g.

p-trimethylsilyl- $\alpha$ -methylbenzyl alc. (II). Then 124 g. II passed through activated alumina at 280-320° and 50 mm. pressure gives 75.5 g. p-trimethylsilylstyrene. Similarly p-triethylsilylstyrene is prepared. These compds. are polymerized by heat and peroxide catalysts to give polymers of improved weathering properties.

ACCESSION NUMBER: 1953:53423 CAPLUS  
DOCUMENT NUMBER: 47:53423  
ORIGINAL REFERENCE NO.: 47:9058d-e  
TITLE: Polymerizable silyl aromatic compounds  
INVENTOR(S): Winslow, Field H.  
PATENT ASSIGNEE(S): Bell Telephone Laboratories, Inc.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2642415		19530616	US 1951-223640	19510428

L8 ANSWER 18 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Amyl alcs., b. 129-31°, are dehydrated preferably by a catalytic vapor phase treatment. The pentenes produced are purified and may be separated into mixts. rich in particular isomers. The proportions of the different isomers produced may be controlled to some extent by a choice of catalyst for the dehydration treatment. Thus, wood charcoal or active C impregnated with phosphoric acid gives at 260° trimethylethylene while activated alumina at 330-70° gives a greater proportion of isopropylethylene. The pentenes are polymerized by stirring with AlCl<sub>3</sub> in petr. ether (e.g. 25-50% by volume of the pentenes) at -5 to -10°. The isomers may be sep. introduced. The liquid polymerizate is decanted and washed with HCl and water. Lime is then added and petr. ether distilled off and recovered for re use. The mixture is heated to 160° to destroy chloro bodies, and the HCl formed is neutralized by the lime. Filtration yields 65% of lubricant based on the amyl alcs. The viscosity of the lubricant may be slightly increased by heating to 110-120° with 5% activated earth.

ACCESSION NUMBER: 1952:63573 CAPLUS  
DOCUMENT NUMBER: 46:63573  
ORIGINAL REFERENCE NO.: 46:10606b-d  
TITLE: Lubricating oil from amyl alcohol  
PATENT ASSIGNEE(S): Compagnie Francaise de Raffinage  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 972870		19510205	FR	19410526

L8 ANSWER 19 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Ester salts of olefin-containing hydrocarbons are obtained in greater yield by bringing the unreacted mixture of olefin and secondary alc. into contact with a dehydration catalyst to convert the alc. to the corresponding olefin. The salts have wetting, detergent, and emulsifying properties. The olefin-unreactive hydrocarbon mixture is sulfated, after dehydration in the presence of activated alumina catalyst, either by the short contact method by using H<sub>2</sub>SO<sub>4</sub> of 99.4% strength in a proportion of 1.5 moles of acid to 1 mole of olefins, or by stirring at a temperature maintained at 10-15° for 20 min. using H<sub>2</sub>SO<sub>4</sub> of 95% strength in a proportion of 0.85 mole of acid to 1 mole of olefins. Alternatively, the mixture of olefins and unreactive hydrocarbons resulting from the

dehydration treatment is added to the feedstock of unreacted olefins, the whole being sulfated under conditions slightly more drastic than those used in the sulfation of feedstock consisting entirely of unreacted olefins. Yields are increased by about 10% by this method.

ACCESSION NUMBER: 1952:28486 CAPLUS  
DOCUMENT NUMBER: 46:28486  
ORIGINAL REFERENCE NO.: 46:4824d-f  
TITLE: Detergents and wetting agents from olefins  
INVENTOR(S): Garner, Philip J.; Short, Henry N.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2587990		19520304	US 1949-105438	19490718

L8 ANSWER 20 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB A mixture of methylphenyl carbinol, activated alumina, and hydroquinone is placed on a reaction tray within an evacuable reaction chamber. The weight of Al<sub>2</sub>O<sub>3</sub> is twice the weight of the alc. present in order to absorb the water produced in the reaction. The reaction tray serves as one electrode of a radio frequency field generator, of which a plate spaced approx. parallel to and but a short distance above the top edge of the reaction tray serves both as a second electrode and as a collecting plate. When the radio-frequency power is applied to the electrodes, the alc., being a polarized dielectric, readily absorbs sufficient energy to become rapidly heated to a temperature to which it decomposes to produce styrene vapor and water. The water vapor is absorbed by the dehydration catalyst. The upper electrode is cooled by a circulating cooling medium which maintains this electrode at a temperature well below the b.p. of styrene (144°). Since styrene is substantially nonpolar, it does not absorb the radio-frequency energy present in the field between the electrodes and hence is not unduly heated thereby. Since O is a catalyst for the polymerization of styrene, it is preferable to provide some neutral atmospheric within the chamber.

By this method styrene or substituted styrene compds. in a pure monomeric form are produced.

ACCESSION NUMBER: 1952:22814 CAPLUS  
DOCUMENT NUMBER: 46:22814  
ORIGINAL REFERENCE NO.: 46:3883f-g,3884a-c  
TITLE: Polymerizable nonpolar substances  
INVENTOR(S): Rosenthal, Fritz  
PATENT ASSIGNEE(S): Radio Corp. of America  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2586996		19520226	US 1947-783138	19471030

L8 ANSWER 21 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Activated bauxite has been investigated as a catalyst for intramol. dehydration reactions, such as the dehydration of ethanol, glycol, glycerol, and ketones, and for intermol. dehydrations, such as reactions of alcs. and NH<sub>3</sub>, alcs. and amines, alcs. and aldehydes, alcs. and acids, and acids and NH<sub>3</sub>. Activated bauxite has been found to be equal or superior to the various forms of activated alumina now widely used. In some cases the Fe oxide in the bauxite acted as a promoter, e.g. in the formation of amines from BuOH and

NH<sub>3</sub> and in the formation of PhNH<sub>2</sub> from ethanol and aniline. The yield obtained in dehydration reactions is also shown to be affected by such variables as reaction temperature and activation temperature of the bauxite.

A continuous process for the formation of acetals from ethanol and aldehyde is described. It is shown that esterification can be carried out more efficiently in the presence of both active bauxite and H<sub>2</sub>SO<sub>4</sub> than of either compound alone. Nitriles can be formed from acids and NH<sub>3</sub> in yields up to 95% in the presence of bauxite of proper activation temperature and Fe content.

ACCESSION NUMBER: 1950:9907 CAPLUS  
DOCUMENT NUMBER: 44:9907  
ORIGINAL REFERENCE NO.: 44:1889g-i  
TITLE: Organic dehydration reactions using activated bauxite  
AUTHOR(S): Heinemann, Heinz; Wert, R. W.; McCarter, W. S. W.  
CORPORATE SOURCE: Porocel Corp., Philadelphia, PA  
SOURCE: Journal of Industrial and Engineering Chemistry (Washington, D. C.) (1949), 41, 2928-31  
CODEN: JIECAD; ISSN: 0095-9014  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 44:9907

L8 ANSWER 22 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Styrene and substituted styrenes are produced at a greater rate and in higher yields by the vapor-phase dehydration of PhCH(OH)Me or a substituted phenylmethylcarbinol in the presence of dehydration catalysts at reduced or sub-atmospheric pressures. Inhibited PhCH(OH)Me vapor is passed over a catalyst, such as activated alumina pellets, at temps. between 300-420° and pressures of 30-300 mm. Hg. The only by-products are water and PhCOMe.

ACCESSION NUMBER: 1947:34609 CAPLUS  
DOCUMENT NUMBER: 41:34609  
ORIGINAL REFERENCE NO.: 41:6897d-e  
TITLE: Styrene and styrene derivatives  
INVENTOR(S): Hunter, Wm.; Groombridge, Walter H.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 589015	----	19470609	GB 1945-6535	19450315

L8 ANSWER 23 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB Me<sub>3</sub>CCH(OH)Me in the gas phase was passed over: (1) "activated alumina grade A" (Aluminum Co. of America). At 300-5° with 100-50 ml. of catalyst per 23 ml. of the alc. per hour, the 3 dimethylbutenes were formed in approx. equal proportions. Reduction of the temperature to 285° and raising the amount of catalyst to 25 ml. resulted in a yield of 3,3-dimethyl-1-butene (I) 75%, 2,3-dimethyl-1-butene (II) 25%, and traces of 2,3-dimethyl-2-butene (III). (2) With other catalysts (ZrO, concentrated H<sub>2</sub>SO<sub>4</sub>, various forms of SiO<sub>2</sub> + Al<sub>2</sub>O<sub>3</sub>) at various temps. and times of contact the operation gave no I; the product (yield 95-97.5%) was divided approx. into 1 part II and 2 parts III. It appears that in (1) I is the primary product, with II and III as secondary products that are more or less in equilibrium under the given conditions. In all cases with the catalysts of (2) there was observed an equilibrium, mostly expressed by  $\log ([I]/[II]) = \log K_p = (360/T) - 0.387$ . With this formula for the reaction II  $\rightarrow$  III there is found  $\Delta H^\circ = -1.650$  kg.-cal. and  $\Delta S^\circ = -1.84$  E.U.

ACCESSION NUMBER: 1946:20696 CAPLUS

DOCUMENT NUMBER: 40:20696  
ORIGINAL REFERENCE NO.: 40:4034i,4035a-c  
TITLE: The dehydration of pinacolyl alcohol  
AUTHOR(S): Keulemans, A. I. M.  
SOURCE: Chemisch Weekblad (1942), 39, 330-5  
CODEN: CHWEAP; ISSN: 0009-2932  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 24 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB Esters of  $\alpha,\beta$ -unsatd. monocarboxylic acids are prepared by the action of dehydration catalysts on  $\beta$ -alkoxy acids or lactones of  $\beta$ -HO acids. Any  $\beta$ -alkoxy monocarboxylic acid having at least one H atom on the  $\alpha$ -C atom may be used. The reaction is:  $RR'(R''O)CR'HCCOOH \rightarrow RR'C:R''CCOOR'' + H_2O$ . R, R', R'' may be H or alkyl, cycloalkyl, aryl, or aralkyl groups, and R''' is an alkyl group preferably of less than 10 C atoms. Acids of low mol. weight of from 4 to 12 C atoms of the formula  $H_2(R''O)CR'HCCOOH$  are preferred, i.e., those which yield esters of acrylic and alkyl acrylic acids, useful in the production of synthetic resins, rubber, etc. The corresponding lactones of the  $\beta$ -HO acids may be dehydrated in the presence of an aliphatic alc. to give the desired esters, by the reaction:  $RR'C.R''HC.C:O + R'''OH \rightarrow RR'(R''O)CR'HCCOOH$  (unisolated intermediate)  $\rightarrow RR'C:R''CCOOR'' + H_2O$ . The  $\beta$ -alkoxy acid may be dehydrated by distilling at ordinary or reduced pressure from the catalyst, e.g., sulfuric, phosphoric, methanesulfonic, benzenesulfonic, or toluenesulfonic acid. It may be passed in the vapor phase over silica gel, activated alumina, or aluminum phosphate. The lactones may be dehydrated by refluxing with the alc. and the catalyst, e.g.  $H_2SO_4$ , followed by distillation. The presence of a polymerization inhibitor is desirable, especially with products such as acrylic esters. Suitable inhibitors are Cu, Cu salts, hydroquinone, pyrocatechol, phenyl-2-naphthylamine, etc. Twenty-six parts of  $MeOCH_2CH_2CO_2H$  is heated in a distilling flask with 35 parts of concentrated  $H_2SO_4$

and a trace of Cu acetate for 0.5 hr. at about  $200^\circ$ . The mixture is distilled and the distillate is dried and redistd. Me acrylate (13.5 parts) is thus obtained. This is also obtained in 67% yield by dehydration of  $MeOCH_2CH_2CO_2H$  with  $MeSO_3H$  and a trace of Cu acetate. A mixture of 72 parts of  $\beta$ -propionolactone, 50 of absolute EtOH, 1 of hydroquinone, and 2 of  $H_2SO_4$  is refluxed while 25 parts of  $H_2SO_4$  and 50 of EtOH are slowly added. After about 2 hrs. the mixture is distilled and the product is purified. Et acrylate in 49% yield is obtained.

ACCESSION NUMBER: 1946:10104 CAPLUS  
DOCUMENT NUMBER: 40:10104  
ORIGINAL REFERENCE NO.: 40:1868a-f  
TITLE: Esters of  $\alpha,\beta$ -unsaturated monocarboxylic acids  
INVENTOR(S): Kung, Frederick E.  
PATENT ASSIGNEE(S): B. F. Goodrich Co.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2376704	A	19450522	US 1943-504602	19431001
PRIORITY APPLN. INFO.:			US 1943-504602	19431001

L8 ANSWER 25 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN

AB 1-Heptene is shown to be the principal product of dehydration of 1-heptanol over activated alumina at  $380-400^\circ$ . No evidence of any chain-branching isomerization of 1-heptene over alumina was obtained. Phys. properties of the 1-heptene so

obtained are: nD20 1.4003 and dD20 0.6971.  
ACCESSION NUMBER: 1945:2816 CAPLUS  
DOCUMENT NUMBER: 39:2816  
ORIGINAL REFERENCE NO.: 39:455c-d  
TITLE: Vapor-phase dehydration of 1-heptanol over  
activated alumina  
AUTHOR(S): Appleby, W. G.; Dobratz, C. J.; Kapranos, S. W.  
SOURCE: Journal of the American Chemical Society (1944), 66,  
1938-9  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

L8 ANSWER 26 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB This paper reports a three-stage conversion of acetone to isoprene. The  
reactions involve the (a) production of 3-methyl-1-butyn-3-ol from acetone  
and Na acetylide, (b) formation of 3-methyl-1-buten-3-ol by catalytic  
hydrogenation with Pd-polyvinyl alc. catalyst (C. A.  
35, 7810.7), (c) catalytic dehydration of the alc. to  
isoprene on activated alumina. An over-all yield of  
77 g. (65%) of isoprene per 100 g. of acetone was obtained; it is  
estimated that yields up to 90 g. should be practicable.

ACCESSION NUMBER: 1941:51459 CAPLUS  
DOCUMENT NUMBER: 35:51459  
ORIGINAL REFERENCE NO.: 35:7937g-i  
TITLE: The conversion of acetone to isoprene  
AUTHOR(S): Taylor, Hugh S.; Shenk, Wilbur J.  
SOURCE: Journal of the American Chemical Society (1941), 63,  
2756-7  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable  
OTHER SOURCE(S): CASREACT 35:51459

L8 ANSWER 27 OF 27 CAPLUS COPYRIGHT 2007 ACS on STN  
AB For producing aromatic hydrocarbons, such as toluene, from aliphatic  
alcs., such as heptyl alc., containing at least 6 C atoms in  
straight chain arrangement, the alc. is brought into contact, at  
a dehydrating and dehydrogenating temperature (suitably about 300-500°)  
with a mixture of a dehydrating catalyst such as activated  
alumina and a dehydrogenating catalyst such as an oxide  
of Cr, Mo, V or W.

ACCESSION NUMBER: 1940:2801 CAPLUS  
DOCUMENT NUMBER: 34:2801  
ORIGINAL REFERENCE NO.: 34:446e-f  
TITLE: Aromatic hydrocarbons from aliphatic alcohols  
INVENTOR(S): Komarewsky, Vasili I.  
PATENT ASSIGNEE(S): Universal Oil Products Co.  
DOCUMENT TYPE: Patent  
LANGUAGE: Unavailable  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2172540		19390912	US	00000000

=> s 18 and "carboxylic acid"  
252242 "CARBOXYLIC"  
48 "CARBOXYLICS"  
252262 "CARBOXYLIC"  
("CARBOXYLIC" OR "CARBOXYLICS")  
4413607 "ACID"  
1585175 "ACIDS"

4914658 "ACID"  
("ACID" OR "ACIDS")  
232376 "CARBOXYLIC ACID"  
("CARBOXYLIC" (W) "ACID")

L9 1 L8 AND "CARBOXYLIC ACID"

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L9 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN

AB Pure saturated C4-12 carboxylic acids were pyrolyzed at a weight space velocity

of .apprx.0.46 h<sup>-1</sup> over activated alumina at 450° and atmospheric pressure. The carboxylic acids produced sym. ketones that further degraded to Me ketones and hydrocarbons presumably via a  $\gamma$ -hydrogen transfer mechanism. The lower molar mass carboxylic acids yielded greater percentages of sym. ketones than the higher molar mass carboxylic acids

. The organic liquid pyrolyzate of butanoic acid contained 78% 4-heptanone, whereas the organic liquid pyrolyzate of dodecanoic acid contained negligible amts. of diundecyl ketone and greater percentages of hydrocarbons. Further pyrolysis of ketone-containing product yielded hydrocarbons. Virtually all of the carboxylic acid degraded to hydrocarbons via sym. ketone. Monoenes were the major hydrocarbon products from ketones and were formed by  $\gamma$ -hydrogen rearrangement, and/or reduction (disproportionation) to alc. followed by dehydration. Me ketones had a distinct preference for reduction to monoenes (containing the same number of carbon atoms) following the latter route.

The results provide a pathway for the conversion of lipid deoxygenation to hydrocarbon fuels.

ACCESSION NUMBER: 1995:776204 CAPLUS  
DOCUMENT NUMBER: 123:148410  
TITLE: Pathway for the Catalytic Conversion of Carboxylic Acids to Hydrocarbons over Activated Alumina  
AUTHOR(S): Leung, Anna; Boocock, David G. B.; Konar, Samir K.  
CORPORATE SOURCE: Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, M5S 1A4, Can.  
SOURCE: Energy & Fuels (1995), 9(5), 913-20  
CODEN: ENFUEM; ISSN: 0887-0624  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

=> s l7

770965 CATALYST  
768408 CATALYSTS  
985295 CATALYST  
(CATALYST OR CATALYSTS)

L10 744 L6 AND CATALYST

=> s l8

531333 "ACTIVATED"  
304973 "ALUMINA"  
2594 "ALUMINAS"  
305251 "ALUMINA"  
("ALUMINA" OR "ALUMINAS")  
3034 "ACTIVATED ALUMINA"  
("ACTIVATED" (W) "ALUMINA")

L11 27 L7 AND "ACTIVATED ALUMINA"

=> log hold

COST IN U.S. DOLLARS

SINCE FILE

TOTAL